

CLAIM AMENDMENTS

Claim 1 (currently amended):

A woodworking machine comprising:

an electrically conductive cutting tool mounted on a rotatable, electrically conductive shaft;

a contact detection system for detecting contact between a person and the cutting tool, where the contact detection system includes ~~one or more electrically conductive drive electrodes~~ a capacitive coupling adapted to impart an electrical signal onto the cutting tool; and

a reaction system configured to cause one or more predetermined actions to take place upon detection of contact between a person and the cutting tool by the contact detection system;

~~where at least one of the drive electrodes is positioned adjacent and spaced apart from the shaft to form a capacitive coupling with the shaft, where the capacitive coupling includes two conductors, where comprises at least a portion of the shaft as one conductive plate, or a conductive part coupled to and moving with the shaft is one of the conductors in the capacitive coupling and the drive electrode is the other conductor in the capacitive coupling, and where the one or more drive electrodes are adapted to impart the electrical signal onto the cutting tool through the shaft~~ a second conductive plate adjacent to and spaced apart from the shaft so that there is a gap between the shaft and the second conductive plate, and a dielectric in the gap between the shaft and second conductive plate.

Claim 2 (original):

The machine of claim 1, further comprising a frame configured to support the shaft, and where the shaft is electrically insulated from the frame.

Claim 3 (original):

The machine of claim 2, where the shaft is mounted in one or more bearings supported by the frame, and where the shaft is electrically insulated from the bearings by one or more electrically insulating components disposed between the shaft and the bearings.

Claim 4 (original):

The machine of claim 2, where the shaft is mounted in one or more bearings supported by the frame, and where the shaft is electrically insulated from the frame by one or more electrically insulating components disposed between the bearings and the frame.

Claim 5 (original):

The machine of claim 1, where the contact detection system includes one or more sense electrodes configured to monitor the electrical signal on the cutting tool.

Claim 6 (original):

The machine of claim 5, where the one or more sense electrodes are disposed adjacent the shaft to monitor the electrical signal on the cutting tool through the shaft.

Claims 7-8 (canceled).

Claim 9 (original):

The machine of claim 1, further comprising a motor assembly configured to rotate the shaft and cutting tool, and where the one or more predetermined actions include stopping the rotation of the cutting tool.

Claim 10 (currently amended):

A woodworking machine, comprising:

a motor;

an electrically isolated, rotatable arbor configured to be driven by the motor, where the arbor has an outer surface;

a circular blade coupled to the arbor;

an excitation system adapted to generate an electrical signal; and

a capacitive coupling adapted to capacitively couple the excitation system to the arbor to transfer at least a portion of the electrical signal to the blade, where the capacitive coupling includes two spaced-apart conductors with a dielectric between them, and where at least a portion of the outer surface of the arbor is one of the conductors.

Claim 11 (canceled).

Claim 12 (original):

A woodworking machine comprising:

a frame;

a conductive cutting tool supported by and electrically insulated from the frame;

a motor supported by the frame and adapted to drive the cutting tool;

a contact detection system adapted to detect contact between a person and the cutting tool, wherein the contact detection system includes a first electrode capacitively coupled to the cutting tool to impart a signal to the cutting tool and a second electrode capacitively coupled to the cutting tool to monitor the signal imparted to the cutting tool; and

a reaction system adapted to stop movement of the cutting tool upon detection of contact between a person and the cutting tool by the contact detection system.

Claim 13 (original):

The machine of claim 12, where the contact detection system includes excitation circuitry coupled to the first electrode, and where the excitation circuitry is adapted to generate a drive signal and output the drive signal onto the first electrode.

Claim 14 (original):

The machine of claim 13, where the contact detection system includes sensing circuitry coupled to the second electrode, where the sensing circuitry is adapted to sense the signal coupled to the second electrode from the cutting tool.

Claim 15 (canceled).**Claim 16 (original):**

The machine of claim 12, further comprising a shaft electrically insulated from the frame, where the cutting tool is mounted on the shaft, and where at least one of the first or second electrodes is coupled to the cutting tool through the shaft.

Claim 17 (currently amended):

A woodworking machine, comprising:

an electrically conductive cutting tool;

a motor configured to drive the cutting tool;

a contact detection system configured to detect contact between a person and the cutting tool;

a capacitive coupling between the contact detection system and the cutting tool, where the capacitive coupling comprises at least a portion of the cutting tool as one conductive plate, a second conductive plate adjacent to and spaced apart from the cutting tool so that there is a gap between the cutting tool and the second conductive plate, and a dielectric in the gap between the cutting tool and second conductive plate; and

a brake mechanism configured to engage and stop the cutting tool if contact between the person and the cutting tool is detected by the contact detection system;

where the contact detection system is configured to impart an electrical signal onto the cutting tool through the capacitive coupling, and to detect contact between a person and the cutting tool based on changes in the electrical signal imparted to the cutting tool.

Claim 18 (canceled).

Claim 19 (new):

The machine of claim 1, where the portion of the shaft comprising part of the capacitive coupling is nominally circular in cross-section, and where the conductive plate is substantially concentric with that portion of the shaft.

Claim 20 (new):

The machine of claim 19, where the conductive plate substantially encircles the portion of the shaft comprising part of the capacitive coupling.

Claim 21 (new):

The machine of claim 17, where the cutting tool comprises a band blade.

Claim 22 (new):

The machine of claim 17, where the cutting tool comprises a circular blade.

Claim 23 (new):

The machine of claim 17, where the cutting tool comprises a circular blade mounted on an arbor.

Claim 24 (new):

The machine of claim 17, where the cutting tool comprises an arbor with a circular blade and pulley mounted thereon.